

RESPONDING TO NON-OCCUPATIONAL PESTICIDE USE-RELATED EXPOSURE EPISODES

Overview

Date established	December 31, 2003
Enclosure to	ENF 03-44
Distribution	County agricultural commissioners
Referral	If you have any questions, please contact your senior pesticide use specialist liaison.
Background	The Department of Pesticide Regulation (DPR) has developed these documents to provide guidance to county agricultural commissioners (CACs) in responding to non-occupational pesticide use-related exposure episodes. This supplements guidance in the Pesticide Episode Investigation Procedures and Pesticide Enforcement Investigative Sampling Manual. DPR has developed two forms as part of the guidance, the Non-Occupational Pesticide Exposure Episode Questionnaire and the Pesticide Episode Investigation Non-Occupational Exposure Supplemental. These forms are enclosed and are explained further on page nine.

DPR and CAC Responsibilities

Introduction

Pursuant to sections 2281 and 12977 of the Food and Agriculture Code, CACs have the responsibility and authority to investigate episodes that may involve potential or actual human illness or injury, property damage, loss, or contamination, and fish or wildlife kills alleged to be the result of the use or presence of a pesticide. DPR relies upon the CAC to provide sound, factual information and is available to assist the CAC during any investigation.

A non-occupational pesticide use-related exposure event (hereafter referred to as “episode”) is any episode related to pesticide application activities that results in exposure to a person while they are not working. Although the CAC is responsible for responding to all such episodes, including episodes in which exposed persons do not seek medical treatment, this document is intended to provide guidance for CAC’s when catastrophic episodes occur involving large numbers of affected people. In recent years, these episodes have often involved off-site movement of fumigants.

Branches within DPR have different objectives in conducting investigations. While the Enforcement Branch focuses on collecting evidence that may document violations, the Worker Health and Safety Branch (WH&S) uses episode investigation information to evaluate the circumstances of exposure, determine whether unsafe use conditions exist, and implement appropriate mitigation measures. In order to accomplish this objective, WH&S frequently needs exposure information for persons affected in episodes and a list of symptoms experienced by each person, whether or not they sought medical treatment

Advisory on emergency response

This document is not intended to supersede local emergency response planning. Significant guidance exists regarding response to episodes where emergency responders such as fire department personnel are likely to have primary responsibility (see WHS Letter 00-09¹). CACs should be involved in their county’s emergency planning group to provide their input and keep abreast of local protocols.

CAC episode response

The CAC should develop and implement a response plan specific to each episode. The response plan should include the following five components: initial response, pre-investigation planning, investigation, mitigation and follow-up.

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¹ Andrews, Charles. Pesticide Episode Response Information. CAC Letter WHS 00-09. December 28, 2000.

DPR and CAC Responsibilities, Continued

Initial Response The CAC conducts Initial Response to quickly get a “thumbnail sketch” of the nature and scope of the episode and to notify appropriate agencies:

- Locate the treated field(s) that may be the source of the episode.
- Identify the pesticide(s) involved.
- Identify the grower and/or pest control business that treated the field(s).
- Considering local environmental conditions, take steps to prevent or limit additional exposures.
- Notify DPR’s senior pesticide use specialist (SPUS) and/or regional office (RO) when it is determined that the episode involves a pesticide. The SPUS/RO is responsible for notifying DPR headquarters as appropriate.
- Notify WH&S at (916) 445-4222 if the episode meets WH&S annual priorities for investigation (see WHS letter 03-06²).
- Decide whether response agencies should be notified, such as the lead agency per county emergency response plan, local health officer, etc.
- Conduct representative interviews to characterize the number of persons affected and the types of symptoms they are experiencing. (See page 5 of this document for general guidance on conducting gradient interviews and page 9 for the Pesticide Episode Investigation Non-Occupational Exposure Supplemental.) Initially, it is not necessary to interview every person potentially exposed. Conduct gradient interviews only until you have an understanding of approximately how many people are affected, how severely, and over how wide an area.
- Some episodes may be larger than the CAC can respond to on their own or may meet local criteria for notifying emergency responders. If so, follow your local county emergency plan and notify appropriate agencies such as County Environmental Health. The CAC can provide technical assistance to emergency responders such as information about the hazards involved. Consult with DPR staff as needed.

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² Andrews, Charles. Worker Health and Safety Roles, Responsibilities, and Priorities for Illness Investigations and Workplace Evaluations. CAC Letter WHS 03-06. August 15, 2003.

DPR and CAC Responsibilities, Continued

- Pre-investigation planning** The CAC conducts pre-investigation planning to set the immediate direction and priorities for the investigation and to identify the resources and methods required to implement the strategy. The CAC generally conducts planning among their staff either in person or by phone. Pre-investigation planning may include DPR staff if appropriate. An important component is determining the information and resources exposed persons require in both the short-term and long-term (see Follow-up section). CACs should:
- Discuss what is known and who is already involved (fire, medical, media, etc.).
 - Use guidance from Enforcement Branch Manuals, CAC letters, ENF/WHs letters, current policies, etc., to plan the investigation.
 - Develop the response and investigation strategy to achieve current objectives:
 - Designate CAC staff as investigation team members. Determine how often and in what form the investigation team will provide status updates to CAC headquarters.
 - Determine the type and number of samples that should be collected, if applicable, to document exposures and/or support violations.
 - Determine the records and other documentation that should be collected.
 - How will the CAC identify the exposed population, notify potentially exposed persons of the episode, and provide them with episode status updates? Options include public meetings, surveys and interviews. Suitable tools may include using door hanger questionnaires, central distribution points, or public meetings.
 - If interviews are opted for, how will they be conducted (gradient or other strategy)? Who will be interviewed? Where will interviews be conducted? Is bilingual expertise needed? Does CAC staff have appropriate questionnaire templates or do they need to develop additional survey tools? (See the enclosed Non-Occupational Pesticide Exposure Episode Questionnaire.)
 - What information do the exposed persons need to know in the immediate and longer term? Will the CAC distribute an information packet? What will it contain? DPR may have fact sheets and other similar resources.
 - Diagram the episode site and adjacent fields or properties with distances.

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DPR and CAC Responsibilities, Continued

Pre- investigation planning (continued)

- Determine staff and material resources needed to conduct the investigation, such as:
 - Additional supplies
 - DPR headquarters, RO, or staff from other agencies to provide technical expertise or assistance with media inquiries, sampling activities, notifying affected persons and/or conducting interviews
 - An information packet to distribute to exposed persons (letter, fact sheets, questionnaires, etc.)
 - California Department of Food and Agriculture Laboratory resources and contacts
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Investigation

The CAC implements the pre-investigation plan by conducting investigation activities to determine how the episode occurred and to characterize the magnitude of the episode (geographic extent, the number of persons exposed, and the severity of their exposures). Where the initial response provided a "thumbnail sketch" of the episode's magnitude, the goal of the investigation phase is to have more exact information on who was affected and how severely:

- Mobilize the investigation team to investigate on-site.
 - Conduct the investigation activities, adjusting the plan as needed to accommodate new information or developments.
 - Collect samples and other information to document the episode.
 - Gather information via interviews and questionnaires. Interview more intensively where people have severe symptoms, such as vomiting, and less extensively where symptoms are less severe, such as transient irritation. For example, if symptoms are severe near the episode site, interview all persons living nearby. Where symptoms are milder a few streets away, interview fewer people.
 - Investigation team members should provide one another and CAC headquarters with periodic episode status updates. Considering what is known and unknown, review the overall objectives and modify the investigation plan as needed.
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DPR and CAC Responsibilities, Continued

Mitigation

Mitigation is conducted in response to pesticide safety issues found during episode investigation and may consist of protective measures in the form of administrative, regulatory, engineering, or other controls. Depending on the nature of the episode, a mitigation measure may be imposed immediately or may be developed over a longer period of time. Protective measures may include stopping a pesticide application, requiring additional water seals or soil seals, evacuating the area, increasing buffer zones, or changing permit conditions. These may be developed by the CAC and/or DPR.

Follow-up

Follow-up is conducted to relay information to exposed persons according to their needs for both the immediate and long term. DPR can provide technical and other assistance (see WH&S Letter WHS 01-02³); other assistance may be available from state and local agencies such as environmental health or state health. Exposed persons want to know what happened and what the CAC knows. A form letter, fact sheet, or other handout material can summarize this information and address their concerns. Consider the following in developing appropriate strategies:

- Provide information on what the CAC is doing or has done to follow up. If the investigation is ongoing, the CAC can report what efforts are underway, such as identifying the pesticide(s) involved, collecting samples, checking records, and conducting interviews.
- Inform residents how they can provide their input into the investigation, via meetings, surveys, interviews, etc.
- Provide information on how, when and where the CAC will communicate with them about the episode and the status of the investigation, e.g., at a public meeting, via final report, etc.
- If a public meeting is planned, explain who will be there (doctor, DPR, Spanish translators, media, etc.).
- If applicable, the CAC may need to provide information on mitigation measures that were adopted in response to the episode.

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³ Andrews, Charles. Physician Consultation on Pesticide-Related Issues and WH&S Branch Assistance on Episode Investigations. CAC Letter WHS 01-02. June 22, 2001.

DPR and CAC Responsibilities, Continued

Conducting gradient interviews

This guidance on conducting gradient interviews presumes a neighborhood of single-family homes. Interview strategies will be tailored to each episode site, as these vary widely from residential to mixed use, and encompass retail sites, apartments, offices, schools, fields, etc.

Gradient interviews are a tool to characterize the magnitude of an episode. They consist of representative interviews of potentially exposed persons along a gradient beginning with the area nearest the exposure source and considering local environmental conditions such as wind direction, continuing along the presumed exposure path(s). The goal is to produce a two-dimensional diagram showing the locations affected, the approximate number of exposed persons in each area, and the distribution of exposure symptoms by severity within the episode area. Investigators should use the Non-Occupational Pesticide Exposure Episode Questionnaire (enclosed) to capture interview responses.

Gradient interviews are conducted first as part of the initial response so the CAC can rapidly characterize the episode. If symptoms are not severe, initial interviews consist of “spot sample interviews,” described below. For episodes involving severe symptoms, many people, or large areas, the CAC may subsequently conduct intensive gradient interviews, such as door-to-door interviews as part of their full-scale investigation.

Begin by interviewing households immediately adjacent to the episode site. Ascertain whether residents were home at the time of the episode and ask them to describe any symptoms they experienced. If persons report severe symptoms, such as nausea and vomiting, the investigator should begin conducting house-to-house interviews. Interview residents until the reported symptoms are of a less severe nature, such as mild coughing, sore or scratchy throat, watering eyes, or headache. At this point begin “spot sample” interviewing of residents in several houses on either side of the sector where the more severe symptoms were experienced until exposed residents of homes report that they did not experience symptoms. If persons adjacent to the episode site report that symptoms were relatively minor, then the interview process can consist solely of “spot sample” interviews.

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DPR and CAC Responsibilities, Continued

**Conducting
gradient
interviews
(continued)**

Continue interviewing outward from the episode site along the presumed exposure path(s), based on local environmental conditions. Conduct “spot interviews” or house-to-house interviews, as indicated by the severity of the symptoms reported. Once residents begin to report less severe symptoms, conduct “spot sample” interviews at every few houses until interviews indicate that exposed persons experienced no symptoms. Depending on local environmental conditions, the exposure gradient may extend in several geographic directions. The interview plan should characterize the width and depth of each geographic direction. Plot the general outline of the episode area and estimate how many persons were potentially exposed. Indicate the distribution of symptoms by severity within the episode area. This information is generally sufficient for the CAC to establish investigational objectives during their pre-investigation planning. Investigators can also use the sketch to develop a more intensive interviewing strategy.

Enclosures

Introduction

The following explains how to use the enclosed Non-Occupational Pesticide Exposure Episode Questionnaire and the Pesticide Episode Investigation Non-Occupational Exposure Supplemental. Both forms can be printed or copied onto single sheets as two-sided forms. DPR developed these forms as tools to collect and track exposure information from persons affected in episodes. If used in your investigation, return a copy to WH&S. WH&S wants your feedback on how well they work for you and any suggestions you have to facilitate capturing exposure information.

Non-Occupational Pesticide Exposure Episode Questionnaire

CAC staff may use this questionnaire to inform potentially exposed persons about an episode and to provide them an opportunity to report exposure information. The questionnaire can be used as a door hanger or made available at public meetings or central distribution points. The CAC can use the information on returned questionnaires to locate persons they may wish to interview more extensively.

Page 1 of the questionnaire was designed as a template and can be used “as is” or as guidance in developing your own page 1. Please feel free to customize page 1 as needed for each episode to accommodate your letterhead, the episode date, the pesticide involved, staff contacts, or provide more information about the episode and your investigation. The CAC may translate the entire document into other languages as needed. The table on page 2 contains fields to capture exposure information of interest to WH&S. Please do not make changes to this table, other than to translate into suitable languages.

Pesticide Episode Investigation Non-Occupational Exposure Supplemental

DPR requests that CAC staff use this report to collect information during interviews after an episode. The standardized format will allow WH&S to track episode data more effectively and WH&S hopes it provides a more efficient and user-friendly way to capture exposure information than do current formats. Fill out all applicable fields as completely as possible. Please do not modify the form. We welcome your feedback on the design, format, or other attributes and will update the form periodically to incorporate your suggestions.
